

ABSTRACT OF THE DISCLOSURE

A method for etching phosphate ores includes a single-pass digesting of ores whose P_2O_5 content is greater than 20% in weight, by at least 10% in weight of a hydrochloric aqueous acid solution associated with an etching solution formation and the separation of the insoluble solid phase and the aqueous phase of the etching solution. Pre-neutralization of the etching solution is accomplished by a neutralizing agent prior to the separation in such a way that the etching solution pH which is less than pH to which an important part of phosphate ions in solution precipitates in the form of calcium monohydrogen phosphate (DCP) is adjusted and in subsequently neutralizing the separated aqueous phase in such a way that a pure DCP is precipitated.